

REPORT SERIES

No. 1

THE FUNCTIONING OF ESTABLISHED ORGANIZATIONS
IN COMMUNITY DISASTERS

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FOREWORD

This document is one of a series of publications prepared by the staff of the Disaster Research Center, The Ohio State University. This aspect of the work of the Center has been sponsored by the Office of Civil Defense under Contract OCD-PS-64-46 Work Unit 2651-A. Below is a listing of the materials which have been included in the monograph and the report series.

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CHAPTER I

ESTABLISHED ORGANIZATIONS: THEORETICAL FRAMEWORK

Introduction

On the pages which follow, the functioning of established organizations is examined. This functioning is viewed in a specific context -- that of the involvement of such organizations in those tasks which are created by a disaster event. The term established organization is perhaps new but the range of phenomena to which the term applies is familiar. It refers to those organizations which most frequently become involved in the various tasks created by disaster impact. The personnel in such organizations are aware of the responsibilities of the organizations and of the nature of the tasks which are anticipated. Most disaster events, particularly those which are community wide, create tasks which fall within the scope of their organizational responsibility. When such an event occurs, these established organizations, using their regular personnel and other resources, become involved.

The concept of "established organization" itself emerged out of the field experience of the Disaster Research Center and was meant to point to a class of organizations which possessed emergency-relevant resources and which were expected by others within the community to become involved in disaster-related tasks. The term is descriptive of police departments, fire departments, public works departments, utility companies, hospitals and others. Such organizations are usually found at the center of concerted community effort coping with the problems created by a disaster event.

The first part of this report will deal with a description of a theoretical framework of organizational functioning. Such a framework is necessarily abstract since abstraction allows one to explore common elements in what otherwise would be a mass of detail. It provides a focus for attention and a classification of observations. In addition, it allows the formulation of possible relationships among the various observations. In this first chapter, a theory and concepts embedded in this theory are elaborated. Chapter II presents certain assumptions of such a theory and some of the illustrative hypotheses which can be derived. Chapter III presents certain field observations in the context of the overall theoretical model. In Chapter IV, additional material is presented on the operational problems of established organizations. These are based on field work on some 47 instances of disasters or other forms of community stress. These observations touch on a number of matters which are not highlighted in the theoretical model but are important in understanding the functioning of such organizations. This will include a discussion of problems of mobilization of personnel, operational problems, interorganizational problems and differential adaptation of such organizations to specific stress events. We begin, however, with the more abstract model of organizational functioning.

Theoretical Model

Since its inception late in 1963, the Disaster Research Center has studied the operations of organizations under stress, particularly the problems encountered by organizations as they endeavor to meet the increased and sometimes unusual demands placed on them by disaster events.

Researchers at the Center have been interested in both intra- and inter- organizational structures and functions in stress situations. Organizational characteristics and processes, such as speed and flexibility in response, adaptability and maneuverability, self-sufficiency and autonomy, span and systems of control and communications networks have greatly interested Center personnel.

As research dealing with these aspects of organizational life continued, a body of theory related to organizational stress emerged. The most systematic statement of this theory is found in Drabek's monograph, Laboratory Simulation of a Police Communications System Under Stress.¹

Drabek summarizes ten basic concepts which collectively form both a theoretical framework and an historical background for much of the Center's research to date. Briefly, these concepts follow:

1. Organization

Adopting the ideas of Haas² and others, Drabek defines an organization as a "relatively permanent and relatively complex interaction system." Of the two major components in this definition, the first is explicit, the second implicit.

First, and most important, organizations are conceived in terms of discernible interaction systems, with an interdependence of parts. These systems of interaction are relatively complex, both horizontally and vertically, and, in addition, relatively permanent, in that they exist over time.

This concept of organizations does not deny the existence of individuals, without whom organizations could not exist. However, the systems of interaction which emerge from patterned, reciprocal and social behavior are the focus of attention -- not the characteristics of the individuals involved.

Second, this definition of organization does not refer to goals. Again, indebted to Haas, Drabek suggests that the existence of organizational goals is problematic at best. Priority is not given to goals as the major element in a definition of organization; instead, goals are considered one of several possible variables to be analyzed. The existence of goals is not denied; neither is their importance. However, this definition stresses the fact that an organization is first and foremost an interaction system which persists over time.

Drabek concludes his discussion on the definition of organization by stating:

This definition thus contains three major advantages: (1) it provides a common framework for the analysis of organizations and groups, (2) numerous theoretical pitfalls are avoided by not considering 'organizational goals' as a definitional element, and, (3) it is consistent with implications found in many research findings.³

2. The Performance Structure

The second basic concept employed by researchers at the Disaster Research Center is that of the performance structure -- those overall patterns or similarities in interaction sequences which become increasingly stabilized over time. Since organizations are patterned interaction systems, focusing attention on these patterns is helpful in the analysis of both the structure and the functioning of organizations.

3. The Normative Structure

The normative structure is the third major concept which has been employed in developing a theory of organizational stress. The normative structure consists of those various social norms which tend to produce observable interaction patterns. Norms are defined as ideas about how classes of persons ought to behave in specified situations; norms apply to categories of people. In addition, norms are considered relative, situational and varying in specificity. Since norms are defined in ideational terms, they refer to how behavior ought to occur rather than to behavior itself. Norms are reinforced in a social system through the application of sanctions, both positive (rewards) and negative (punishment).

A. Role

Role is one of the most important concepts employed by sociologists. While the term is variously used, organizational sociologists almost always use it to refer to a cluster of norms which describes sets of behavioral specifications. One's roles in an organization are normatively defined and are a part of the normative structure. Roles are reciprocal rather than unitary in nature, e.g., doctor-nurse, doctor-patient and doctor-administrator. Roles are examined in terms of the particular organizational incumbents involved in interaction, and in terms of the specific situation which precipitates interaction.

B. Position

A position contains a cluster of roles that are defined as belonging together. Persons enact positions according to certain norms and are expected to behave according to those norms as they interact with incumbents in other positions. The medical doctor who enacts the position of chief of staff in a hospital behaves differently than the doctor who serves as the head resident. Both perform their tasks in a manner unlike the doctor who admits patients to the hospital but who has no direct administrative relationship to those in

power and authority. Each occupies a somewhat similar societal status, that of medical doctor, but each enacts a different position, for the systemic ties associated with these roles call for unlike role relationships.

4. The Interpersonal Structure

The performance structure of an organization is those patterns or sequences which emerge as a result of prolonged interaction between incumbents in an organization. These patterned interactions can be observed, quantified and analyzed. Because they are empirically observable, the concept which represents them, the performance structure, is an extremely useful one.

In large measure, the performance structure of an organization can be explained by the normative structure of that organization -- by its norms, roles and positions. However, certain patterned behaviors cannot be adequately explained by the normative structure alone; for this reason, another analytical concept had to be developed: the interpersonal structure.

Briefly, the interpersonal structure of an organization is the sets of stable person-to-person expectations and understandings which are noncategorical and nonrelated to the positions which persons enact. These expectations and understandings are functions of the relationships which exist between persons as persons, independent of the norms which specify the various role relationships which form a position.

5. Internal Resources

All intraorganizational resources currently being used or known to be available for use by organizational personnel constitute the internal resources of an organization, including not only equipment, materials, buildings, information, records and personnel, but also ideas about how these resources can be used to meet demands placed on the organization.

6. External Resources

The external resources of an organization are those extraorganizational resources currently being used or known to be available for use by organizational personnel, also consisting of equipment, materials, buildings, information, records, personnel and ideas.

The ecological placement of both types of resources is an important determinant in their use. The placement of personnel, equipment and facilities in most organizations is usually predicated on the ecological principles of minimum cost and median location. This is especially true for organizations dealing with public emergencies such as police and fire departments where the response of the organization to legitimate demands made on it must be both immediate and coordinated.

7. Organizational Capability

Organizational capability has been one of the most crucial concepts employed by the Disaster Research Center. Researchers at the Center have made concerted efforts to define, isolate and measure those variables by which organizational capability can be assessed.

Organizational capability has been defined as the range of possible actions which an organization could perform, if decisions to do so were made. It includes the ability to meet those tasks considered a part of the organization's daily routine, in addition to certain other tasks considered as legitimate demands on the organization.

8. Organizational Demands

The concept organizational demands is defined as the requests or commands for organizational action, either received directly by any member of the organization, or received indirectly through knowledge of events which provide demand-relevant cues.

An off-duty fireman who was in the audience at a community event as a spectator first notified the dispatcher of the fire department of an explosion and fire. The explosion and subsequent fire served as a demand-relevant cue for this fireman. Although he was not officially on duty at the time, he interpreted these events as legitimate demands on the fire department and called on-duty officers to request aid. The second official notification came from another off-duty fireman who was also a spectator at the event. He too called the fire dispatcher, reported the event and suggested that men and apparatus be sent to the scene at once.

In contrast, police and fire officials alerted the medical staffs of hospitals in and adjacent to the city to the potentially heavy demands on their personnel and facilities.

Obviously, demands on all organizations vary from day to day, and, in some instances, from season to season. These demands vary in both number and kind; in addition, priorities attached to demands vary. Some demands, if unfulfilled, have more serious consequences for an organization and a community than do others. Some demands threaten high priority values of the organization and community. Hence, a decision required by the mayor's office to order, or not to order, the evacuation of a city because of an approaching hurricane may be the most important decision the mayor might make during his term in office.

Closely related to the degree of seriousness attached to a demand is the variable of time; that is, how much time is available before organizational action is required. Demands placed on emergency organizations, such as police and fire departments, usually carry a relatively high degree of seriousness and require immediate action. In contrast, demands placed on a city street department generally are much less serious and allow greater flexibility in the speed of response.

The seriousness attached to the demand and the amount of time available before organizational action is required, together determine the priority of the demand.

Thus, organizational demands change along three separate axes: quantity of demands, actual qualitative changes in demands and changes in priorities attached to demands.

9. Organizational Strain

The concept organizational strain refers to inconsistencies or discrepancies between structural elements of an organization. Role conflict is one example of organizational strain. When incumbents enacting positions in an organization are faced with conflicting expectations, role conflict exists. For example, the positions enacted by certain supervisors or foremen in a factory organization may carry with them certain ambiguous, mutually exclusive expectations, held jointly by their superiors and subordinates. On one hand, management officials may expect them to maintain high productivity among the men; on the other hand, production employees may expect them to represent their interests before management. These conflicting expectations may create organizational strain in the form of role conflict.

These conflicts may be both qualitative, when expectations are inconsistent, and quantitative, when demands for time and energy requested by related position holders are excessive.

The latter type of conflict is illustrated by the factory foreman whose position includes supervisory, administrative and production roles. If the demands on his time and energy become so extensive in any or all of these roles that he is unable to perform them at the expected level of proficiency, organizational strain will probably result.

At another level, inconsistencies may exist between official and unofficial normative elements. Similarly, normative dissensus may exist between two structural units of an organization, e.g., departments. Among the several factors which may elicit dissensus are the legitimacy and priority of demands. For example, following an earthquake, first aid units attached to a fire department may wish to render all possible aid in searching for victims, even to the point of using additional men from other units, e.g., a pumper. However, if there is danger of numerous fires developing, fire officials may place highest priority on maintaining a state of readiness for fire suppression.

Structural inconsistencies are probably found in most organizations and exist as a part of the ongoing structure; however, when an organization experiences heavy demands on its resources, such as in times of disaster, serious organizational problems may result. If one hopes to predict an organization's reaction to stress situations, knowledge of such strain is extremely important.

10. Organizational Stress

A great portion of the research conducted by the Disaster Research Center has assumed that organizational capability and the demands placed on an organization represent a dynamic equilibrium in which normally a stable relationship exists with the capability exceeding the demands. For example, the organizational capability of a fire department is rarely if ever fixed by an arbitrary decision of the officials concerned with fire protection. Rather, the department's capability is determined largely by the demands, present and/or potential, which may be made upon it.

In organizations such as police and fire departments, organizational structures frequently include some emergency plan of operations whereby the capability of the organization can keep pace with potentially heavy demands. For example, following the widespread forest fires near Santa Barbara, California, in September of 1964, Disaster Research Center staff researchers interviewed a large number of fire-fighting personnel of the United States Forest Service. These fire personnel indicated that the forest service had an extensive set of emergency operating procedures to mobilize its fire-fighting resources. These procedures included the calling of high-ranking officers, the notification of off-duty personnel and the activation of reserve apparatus including communications equipment, aircraft and bulldozers. By employing reserve personnel and equipment and by requesting assistance from other forestry units contiguous to the one actively engaged, the organization sought to maintain a state of relative equilibrium between the demands being made on it and its organizational capability.

However, when the legitimate demands made on an organization exceed that organization's ability to respond in an acceptable manner (that is, in a manner consistent to the norms which prescribe the organization's mode of operation), that organization is experiencing stress.

Moreover, the degree of organizational stress is determined by the relationship between two variables: (1) the level of organizational demands, and (2) the level of capability. A maximum stress situation produced by an extensive community disaster could be characterized by:

- I. A change in organizational demands
 - A. Quantity
 1. Sharp increase
 2. Unanticipated increase
 - B. Priority
 1. Consequences of organizational action threaten central values of society, i.e., organizational actions viewed with increased seriousness
 2. Immediate organizational action required
 - C. Qualitative changes
 1. Demands previously met but not currently being met made on the organization
 2. New demands not previously made on the organization made and temporarily accepted by the organization

II. A change in organizational capability

A. Intraorganizational

1. Absence of personnel, especially key personnel
2. Absence of important equipment, material or buildings
3. Absence of crucial information or records

B. Extraorganizational

1. Absence of personnel, especially key personnel
2. Absence of important equipment, material or buildings
3. Absence of crucial information or records⁴

Using this theoretical framework, many hypotheses can be posited about organizations and organizational stress.

FOOTNOTES: Chapter I

1. Thomas E. Drabek, Laboratory Simulation of a Police Communication System Under Stress (Columbus: The Ohio State University, College of Administrative Science, in press).
2. Much of the basic framework outlined in this section was initially formulated by Haas. See especially, J. Eugene Haas, "Role Position and Social Organization: A Conceptual Formulation," Midwest Sociologist, XIX (December, 1956), pp. 33-37; J. Eugene Haas, Role Conception and Group Consensus (Columbus: The Ohio State University, Bureau of Business Research, 1964), pp. 25-31.
3. Drabek, op. cit., p. 33.
4. Ibid., pp. 48-49.

CHAPTER II

ASSUMPTIONS AND HYPOTHESES

The basic assumptions which have guided much of the research conducted by the Disaster Research Center are as follows. First, when a community disaster occurs, unusually heavy demands are made on the emergency organizations of that community. Second, if the demands on the organization exceed the organization's response capability, organizational stress will result. Third, this stress will be evident in unplanned changes and disruptions of the performance structure of the organization. Thus, the performance structure of an organization under stress is conceptualized as different following a disaster from its pre-disaster state. The pre-disaster state is designated as Time One and the immediate post-disaster state as Time Two. To reiterate, organizational stress is the precipitating changes in the performance structure of an organization, an alteration in both the organization's normative and interpersonal structures. Prescribed modes of organizational response either are neglected entirely or are altered in an effort to increase the organization's proficiency and overall capability. Similarly, it is hypothesized that changes in the interpersonal structure will occur. Fourth, these changes in the performance structure are empirical indicators of the stress experienced by an organization. By observing these changes and relating them to the conditions which precipitate organizational stress, hopefully the occurrence of such stress can be predicted in advance of the disaster event.

Drabek suggests the following hypotheses related to the occurrence of organizational stress:¹

1. The greater the increase in demands, the greater the degree of change in the performance structure.
2. The more the increase in demands is unanticipated, the greater the degree of change in the performance structure.
3. The more serious the consequences of the demands, the greater the degree of change in the performance structure.
4. The sooner organization action is required to respond to the demands, the greater the degree of change in the performance structure.
5. The greater the number of demands, previously made but not currently being met, made on the organization, the greater the degree of change in the performance structure.
6. The greater the number of demands not previously made on the organization, the greater the degree of change in the performance structure.

7. The greater the absence of key intraorganizational personnel, the greater the degree of change in the performance structure.
8. The greater the absence of important intraorganizational equipment or material, the greater the degree of change in the performance structure.
9. The greater the absence of crucial intraorganizational information, the greater the degree of change in the performance structure.
10. The greater the absence of key extraorganizational personnel, the greater the degree of change in the performance structure.
11. The greater the absence of important extraorganizational equipment or material, the greater the degree of change in the performance structure.
12. The greater the absence of crucial extraorganizational information, the greater the degree of change in the performance structure.

Drabek offers a second set of propositions which deal with the question: "When an organization is in a stress state, what in the performance structure will change?" Although this question cannot be satisfactorily answered without a rather complete inventory of changes which have in fact occurred as the result of organizational stress, Drabek indicates, on the basis of disaster research already completed, that it is possible to determine four major focal points of structural change: (1) tasks or activities, (2) decision-making patterns, (3) lines of authority, and (4) communications patterns. Much additional work is required before these dimensions can be separated into their many components so that measures can be developed for each of the several variables included.²

Areas in which hypotheses appear to be most fruitful are:³

1. As the degree of organizational stress increases, the rate of task performance increases.
2. As the degree of organizational stress increases, organizational incumbents increasingly limit activities to tasks of highest priority.
3. As the degree of organizational stress increases, the rate of official decision making increases.
4. As the degree of organizational stress increases, organizational incumbents increasingly make only decisions of highest priority.
5. As the degree of organizational stress increases, the rate of unofficial decision making increases.

6. As the degree of organizational stress increases, the number of individuals conferred with before a decision is made decreases.
7. As the degree of organizational stress increases, the amount of deviation from the official lines of authority increases.
8. As the degree of organizational stress increases, the lines of authority shift to emphasize special skills and/or knowledge of position incumbents.
9. As the degree of organizational stress increases, the number of organizational incumbents through which directives are transmitted decreases.
10. As the degree of organizational stress increases, the total amount of information to be communicated increases.
11. As the degree of organizational stress increases, the amount of deviation from the official communications channels increases.
12. As the degree of organizational stress increases, the modes of communication shift to maximize speed.

In addition to the questions of when organizational stress occurs and what aspects of the performance structure are most affected, researchers at the Disaster Research Center have sought to discover why the performance structure of an organization changes as it does.

Among the many variables which could be selected in an initial analysis of this question, the major emphasis has focused on two: pre-emergency planning and organizational strain. These two variables account for much of the post-disaster variation in organizational performance structure.

Analysis of the first variable, pre-emergency planning, begins with this question: What influence, if any, do emergency plans formulated prior to a disaster (Time One) have on the performance structure as it exists in post-disaster times (Time Two)? Some organizations have disaster plans which specify how the performance structure of the organization is to function during times of unusually heavy demand. Such plans are part of the official normative structure of the organization and serve as criteria by which post-disaster performance can be evaluated.

Drabek offers these hypotheses on the influence of official disaster plans on the post-disaster performance structure of organizations:⁴

1. The greater the extent to which organizational plans specify the nature of the emergency situation, the greater the influence of such plans on the performance structure at Time Two.

2. The more detailed and specific the organizational plans specify the nature of the 'emergency performance structure,' the greater the influence of such plans on changes in the performance structure at Time Two.
3. The more frequently organizational plans which specify the nature of the 'emergency performance structure' are rehearsed, the greater the influence of such plans on the performance structure at Time Two.
4. The greater the proportion of organizational incumbents participating in rehearsals of organizational plans which specify the nature of the 'emergency performance structure,' the greater the influence of such plans on the performance structure at Time Two.
5. The more 'realistic' the rehearsals of organizational plans which specify the nature of the 'emergency performance structure,' the greater the influence of such plans on the performance structure at Time Two.
6. The more nearly rehearsals of organizational plans which specify the nature of the 'emergency performance structure' coincide with the characteristics of the disaster, the greater the influence of such plans on the organization at Time Two.
7. The more widely organizational plans which specify the nature of the 'emergency performance structure' are disseminated within the organization, the greater the influence of such plans on the performance structure at Time Two.
8. The more frequently organizational plans which specify the nature of the 'emergency performance structure' are re-evaluated, the greater the influence of such plans on the performance structure at Time Two.
9. The more accurately organizational plans which specify the nature of the 'emergency performance structure' coincide with the characteristics of the disaster, the greater the influence of such plans on the performance structure at Time Two.
10. The more easily organizational plans which specify the nature of the 'emergency performance structure' can be adapted to fit the conditions of the disaster, the greater the influence of such plans on the performance structure at Time Two.

Researchers at the Disaster Research Center have sought to explain why the performance structure of an organization under stress changes as it does by employing two variables: pre-emergency planning and organizational strain. The hypotheses dealing with the first of these variables, pre-emergency planning, have been outlined above. Before discussing hypotheses dealing with organizational strain, it will be helpful to recall that organizational strain was

defined as discrepancies between the internal structural elements of an organization. The general hypothesis is that the greater the degree of organizational strain among elements of an organization at Time One, the greater the amount of change in the performance structure at Time Two. The following hypotheses are stated to indicate variations in the tendency towards performance structure change:⁵

1. The greater the degree of role conflict experienced by particular position incumbents at Time One, the greater the degree of change in the performance structure at Time Two.
2. The greater the degree of role ambiguity experienced by particular position incumbents at Time One, the greater the degree of change in the performance structure at Time Two.
3. The greater the degree of role dissensus between any two position incumbents at Time One, the greater the degree of change in the performance structure at Time Two.
4. The higher the location of organizational strain in the organizational structure at Time One, the greater the degree of change in the performance structure at Time Two.
5. The greater the degree of dissensus as to priorities of organizational demands between any two position incumbents (or structural units such as departments) at Time One, the greater the degree of change in the performance structure at Time Two.
6. The greater the degree of dissensus as to the legitimacy of various organizational demands between any two position incumbents (or structural units such as departments) at Time One, the greater the degree of change in the performance structure at Time Two.

This section of the monograph has given a brief résumé of the general assumptions and hypotheses which have guided much of the research conducted by the Disaster Research Center to date.

These assumptions and hypotheses have followed logically from the theoretical statement presented and have been formulated on the ten basic conceptual tools which have been outlined and defined.

The hypotheses offered deal with the three basic questions related to organizations under stress: (1) when will organizational stress occur, i.e., what are the precipitants of organizational stress; (2) what in the performance structure of an organization will change when that organization is undergoing stress; and (3) why does the performance structure of an organization under stress change as it does.

While community disasters were consistently used as referents, with special attention being given to organizations perceived as experiencing stress, the theory offered has much wider use. Disasters are only one source of

sudden change in the relationship between organizational demands and capability. Thus, the theory and the hypotheses presented have potentially wide implication and usage.

FOOTNOTES: Chapter II

1. Thomas E. Drabek, Laboratory Simulation of a Police Communication System Under Stress (Columbus: The Ohio State University, College of Administrative Science, in press), pp. 51-52.
2. Ibid., p. 54.
3. Ibid., pp. 54-55.
4. Ibid., pp. 56-57.
5. Ibid., pp. 57-58.

CHAPTER III

THEORETICAL FINDINGS

The most systematic test of this theory and the hypotheses emerging from it has been conducted by Drabek in his laboratory simulation of the communications section of a metropolitan police department.¹ This unique study has already been cited several times. In addition to Drabek's work, a number of other less systematic efforts have been made to test the validity of the basic assumptions and hypotheses being used by the staff of the Center, involving actual field investigation of organizations in disaster environments.

An effort will be made to summarize the findings to date. This summary will be organized on the three basic questions: (1) when will changes in the structure of an organization experiencing heavy demands occur, (2) what aspects of the organization's structure will be most affected, and, (3) why does the structure of an organization under stress change the way it does. These three questions form the basis of the many hypotheses posited above. For the purposes of this summary, the hypotheses will be consolidated insofar as possible and treated generally, since Drabek alone has sought to test them specifically and systematically.

The hypotheses dealing with the first question, when will changes in the structure of an organization experiencing heavy demands occur, include the following elements: the increase in demands, the time available for response, the number of unmet demands, the number of new demands and the absence of key intra- and extraorganizational personnel, equipment, records and facilities.

A review of the studies completed by the Center indicates that the concept, organizational stress, is a useful one in understanding those changes which take place in the structure of an organization faced with more legitimate demands than it can meet. This imbalance between demand and capability is the key to understanding when an organization will experience stress.

Community organizations, especially public service ones, such as police and fire departments, are expected to fulfill certain tasks important to the community system, e.g., the preservation of life, the protection of private property and the maintenance of public order. When these organizations cannot successfully fulfill these task expectations for any of the reasons suggested above -- number, unexpectedness or seriousness -- certain changes have been observed in their structures. For example, following the coliseum explosion in Indianapolis, Indiana, on the night of October 31, 1963, a number of organizations experienced varying degrees of organizational stress as a result of heavy demands placed on them by the explosion, fire and numerous injuries.² Within a one-hour period, over 120 persons entered the emergency room of one hospital. Since the hospital's facilities were not capable of handling such a volume of emergency patients, certain adaptive procedures were begun. Steps to free beds for those requiring hospitalization included the early discharging of some resident patients as well as the cancellation of all scheduled surgery except that involving emergencies. Shift personnel remained on duty, some

off-duty staff members were recalled and emergency plans were activated.

One of the immediate problems confronting a police department following another disaster event was to find enough ambulances to transport the injured to area hospitals. At the peak of this shortage, an officer called the police dispatcher to report an attempted suicide and to request an ambulance. The dispatcher replied that he would try to send one. When it was not forthcoming, the officer with the attempted suicide called the dispatcher a second time to inquire where the ambulance was. The dispatcher replied that it would probably be some time before it could get there. Later the officer called a third time to say: "We have a man here with a truck that we could put her in and take her to the hospital." The dispatcher replied, "Well, that's advisable. It would be some time before we could get over there for you."

One of the most vivid examples of organizational stress observed by the Disaster Research Center staff occurred during the fires which swept large areas of Tasmania, Australia, during the week of February 5, 1967. The fires were so numerous and widespread that, at one time on February 7, every available professional fireman in the city of Hobart had been dispatched, including all the men in the substations. In fact, at one point, just a single officer was left at headquarters to handle all dispatching duties. Every regular fireman in the Hobart Brigade was out fighting fires within the city proper and its suburbs. Since the extraorganizational resources available to the Hobart Brigade were all but nonexistent, and since those which were available consisted of a number of volunteers who had no adequate equipment with which to work, the stress on the Hobart Brigade was quite evident.

Police departments in various communities where disasters have occurred have frequently experienced changes in their performance structures due to increased demands. This was true in Anchorage, Alaska, following the earthquake there. The department was confronted with the usual security and traffic problems plus the necessity of guarding hundreds of stores, offices and homes which had sustained shattered doors and windows.

While the Disaster Research Center did not study the Los Angeles Police Department's response to the Watts riots, considerable information was obtained about its activities from the Center's in-depth study of that city's fire department. The field work conducted in Los Angeles demonstrated that many of the major problems encountered by the fire department arose from the inability of the police department to provide it with sufficient protection from mob harrassment. Also, the demands placed on the Los Angeles Police Department far exceeded its capacity to respond.

In each of the above instances, the data indicate that every effort was made to meet demands by activating off-duty personnel and reserve equipment and by relying on extraorganizational resources -- the National Guard and sheriff's deputies. As these adjustments were made, changes in the performance structure of the organizations analyzed were noted.

Thus, the data collected by the Center suggest that one of the precipitants of organizational change in disaster settings is a heavy increase in the demands

made on existing organizations, especially those organizations whose tasks are normally associated with emergency operations.

A second precipitant of organizational change is the unexpectedness of increased demands. In the Anchorage, Alaska, earthquake there was neither warning nor a previous event of a similar nature. The same is true for the Indianapolis Coliseum explosion, the Northeastern power failure of November 9-10, 1965, and the rioting in Los Angeles. In Anchorage, this unexpectedness is perhaps best illustrated by the fact that no organization, with the exception of the public utilities, had any plans for dealing with peacetime disasters. The rioting and fires in Los Angeles were totally unexpected, at least their magnitude.

Following the Vajont flood in northern Italy, fire departments near the devastated town of Longarone suddenly found themselves faced with the problem of searching for and salvaging over 2,500 bodies. This demand was totally unanticipated and unprepared for. Consequently, a number of changes in the performance structure of the various departments involved was observed.

Other examples of organizational change caused by unexpected demands could be noted. Almost without exception, the research reports completed by the Center reveal that unexpected demands are placed on many organizations in disaster environments. This is especially true of those organizations oriented toward emergency services, although it is not limited to them. For example, a large number of Roman Catholic nuns became actively involved in a great many community organizations in New Orleans following Hurricane Betsy in October 1965.

A third factor affecting the occurrence of organizational stress in disaster settings is that of increased demands requiring immediate action, especially when human life and property are at stake.

In Niigata, Japan, the police learned that they had only minutes in which to warn and evacuate thousands of people from low-lying areas before the tsunami waves hit.

Similarly, because of the high value placed on human life in our society, the Indianapolis police after the coliseum explosion focused so much attention on transporting the injured to hospitals that they neglected to control the heavy influx of vehicular traffic into the area. For a time, the resulting congestion seriously limited the movement of emergency vehicles between the coliseum and local hospitals.

Another precipitant of organizational stress is new and previously unmet demands which are accepted, at least temporarily, by organizations in disaster environments. Frequently these demands include those of a type not usually made on the organization.

In floods in Montana, a city engineering department was called upon to direct rescue and evacuation operations and to help in traffic control and security in addition to its normal engineering functions. In Anchorage, personnel in the engineering section of the Public Works Department involved themselves

in a host of duties normally unrelated to their daily tasks; for example, the chief engineer participated in a sewer inspection program.

These newly placed demands, which are temporarily accepted by organizations following disasters, frequently prevent these organizations from meeting other demands normally accepted and met. When this occurs, especially in concert with a large number of unanticipated demands involving immediate action and high priority, changes in the performance structure have been noted.

During the Watts rioting, the Los Angeles Fire Department assumed a number of tasks not normally associated with its operations. At the same time, it discontinued certain tasks normally performed. It not only discontinued certain intradepartmental procedures, such as drills, alarm checks, and routine maintenance of station houses, but it limited fire suppression activities to those structures which housed large inventories of merchandise or which were strategically located in terms of possible fire spread. At one stage of the rioting, the department did not respond to street box alarms originating from the Watts area. Neither did it respond to automobile fires, fires in small isolated structures or to structures which were rekindled a second or third time.

The Indianapolis Police Department became so involved in the rescue and transportation of the injured that it became difficult to maintain adequate control of traffic in the area adjacent to the coliseum.

The illustrations offered above have shown primarily the impact of changing demands on the performance structure of organizations in disaster settings. This, however, represents but half the picture, since changes in the performance structure of organizations tend to occur in direct relationship to changes in their demand-capability ratio. To understand more fully the changes which occur in the performance structure of organizations in disaster environments, it is necessary to understand not only the alterations in the demands made on the various organizations but also alterations in organizational capability.

The hypotheses suggest that an organization's capability is largely determined by its internal and external resources, including personnel, equipment, facilities, records, information and ideas.

The following examples illustrate some of the research findings dealing with organizational capability formulated by members of the Disaster Research Center staff.

In almost every disaster studied, the absence or loss of key personnel alters the capability of organizations. Sometimes this unavailability is temporary and relatively unimportant in the organization's total response. On other occasions, it is extremely important and seriously affects the organization's ability to perform its expected tasks.

Following one localized disaster event, an analysis of recorded police telephone calls shows that none of the top police officials was notified

immediately of the disaster. As a result, the chief of police and his two chief deputies arrived on the disaster scene nearly an hour after the explosion. Those officers with the greatest authority to assume overall control and establish coordination were not present at the height of the emergency, the immediate post-impact period. Consequently, as each police unit arrived at the disaster scene, its personnel tended to work independently in rescuing, directing traffic, transporting victims to hospitals and making requests for equipment. Only after the chief and his deputies arrived did the department become effectively organized; then, officers were directed to establish security at key points, were sent to hospitals to obtain casualty lists and were assigned traffic control duties.

On other occasions, the absence or loss of personnel has been even more acute. During the Niigata earthquake in Japan, some organizations had as many as half their personnel absent for extended periods of time because their families had been affected by the earthquake and/or the resulting fires and floods. In Longarone, Italy, almost all of the officials who would normally cope with a community disaster were killed. There is evidence to support the contention that the National Guard was delayed in being mobilized during the Watts rioting because the governor of California was abroad and unavailable for immediate consultation with the lieutenant governor and other public officials.³

Other examples could be added to the list; however, the point is demonstrated: when organizations confronted by large-scale emergencies lack certain personnel, especially key personnel, their performance structure undergoes change.

The loss or lack of certain equipment or facilities may also affect the performance structure of organizations confronted with unique or unusually heavy demands.

During the Baldwin Hills reservoir break in California, the Los Angeles Police Department had a number of vehicles washed away by the deluge. In the Niigata Prefectural Headquarters, a generator intended for use as an alternate power source just happened to be elsewhere for repair. The Cleveland Fire Department experienced a number of equipment failures during the Hough riots of July 1966. One pumper had to be removed from duty when its motor broke down after several hours of continuous use. Since it had very limited reserve apparatus, the department suffered a loss of important equipment at a crucial stage in the rioting. In addition, the overall efficiency of the department was somewhat handicapped by a number of flat tires sustained by emergency vehicles as they passed over glass-strewn streets.

Following an explosion, a police department had great difficulty in effecting the immediate rescue of many victims trapped under concrete and steel debris, because neither the police nor the fire department had heavy-duty cranes as equipment. Consequently, rescuers had to await the arrival of large cranes "borrowed" from private business concerns in the city.

In addition to the absence or loss of important intraorganizational personnel, equipment and facilities, an organization's capability is reduced when

the extraorganizational resources on which it relies are reduced or lost.

One of the most potentially serious problems confronting fire officials in Cleveland during the Hough riots of July 1966 was their inability to call on neighboring fire departments for assistance. Although there were mutual aid agreements among the Cleveland Fire Department and several departments in neighboring cities, Cleveland officials did not activate these arrangements for at least two reasons. First, a number of departments were in communities with large Negro populations and were on an alert basis in anticipation of possible rioting and fires, and, second, many of the mutual aid departments had quite limited resources, e.g., three pieces of apparatus and 15 full-time employees. To request even one piece of equipment and one shift of personnel at a time when fires might be ignited in any community in the metropolitan area seemed to Cleveland officials an imposition on their neighbors. (From this example and others like it, it is apparent that most mutual aid pacts in metropolitan areas are rendered inoperable or are seriously limited in their utility by widespread, multi-community disasters.) In Cleveland, the city fire department did not feel free to call for assistance when it needed it during the rioting. Thus, they actually experienced a loss in extraorganizational resources.

The lack or absence of vital information, both on an intra- and inter-organizational level, is another problem confronting all organizations during disasters.

Perhaps the major problem confronting one police department following an explosion was the absence of reliable information. Information from officers at the scene was so fragmented, uncoordinated and diffuse that it was all but useless to those attempting to organize the department's response. When officers at the scene requested some "wreckers, cranes or something" to speed up rescue of victims trapped under heavy concrete slabs, police dispatchers sent a great many wreckers, none of which was capable of lifting heavy weights. Their convergence at the disaster scene only added unnecessary traffic.

Likewise, although most of the injured had been removed by midnight, police dispatchers at 1:30 a.m. were still sending individuals who had volunteered the use of station wagons, buses and trucks to the disaster site. They, too, increased traffic problems at a time when police officers were already heavily taxed with other demands. Dispatchers at police headquarters were not kept apprised of conditions at the site; hence, they did not have sufficient information to judge adequately what was needed. Therefore, no meaningful decision was possible on whether or not to dispatch a particular piece of equipment or volunteer to the disaster scene.

If the police had been able to determine quickly who and what needed to be mobilized, much of the individual and group convergence at the site probably could have been avoided. However, because of inadequate information from the disaster site itself, headquarters could do little to command and coordinate the mobilization of other organizations and individuals in the area.

A similar situation occurred following the explosion at the Medina Atomic Energy Commission Base in San Antonio, Texas, on November 13, 1963. When the

detonation occurred at the base, the telephone lines which would normally have been used to contact local officials were immediately jammed by incoming calls. Therefore, responsible local officials had no way of knowing whether or not there was danger to the surrounding population or if assistance was needed at the base itself. As a result, personnel from the various local organizations were sent to the scene by automobile with a resulting loss of time. As it turned out, assistance was not needed and there was no danger to the population. However, if the debris in the cloud had been radioactive and the prevailing winds had been moving in a different direction, the results could have been tragically different. The time loss in getting relevant information could have been crucial under the conditions which existed.

Other examples illustrating the lack of adequate information for emergency organizations following disasters can be cited. After the Alaska earthquake, initial estimates of dead and injured were greatly exaggerated. Early estimates of dead and injured in one community following an explosion were far short of final figures. The first fireman to report from the scene was asked, "How many are hurt?" "Oh, hell! I imagine around 50, 75, maybe 100." When this initial estimate is compared to the final count of 74 dead and 400 injured, the inadequacy of the information with which emergency organizations had to work becomes readily apparent.

After the Jackson, Mississippi, tornado of March 3, 1966, the major problem confronting a hospital in the city was not a lack of personnel or facilities but a lack of reliable communication between the hospital staff and persons working at the disaster site about two miles away. The news received by staff persons was from ambulance drivers and others who arrived from the scene. The information communicated usually consisted of estimates of the number of casualties that would be found under the debris. As later discovered, these estimates turned out to be extremely high.

Having no other information on which to act had a significant influence on the performance structure of that hospital. Staff members reported that the uncertainty, fed by indirect reports of a possible large influx of victims, created some pressure to process cases as quickly as possible. That is, some of the medical personnel felt that if many more casualties were to arrive, it would be best to handle the injured already at the hospital as fast as possible, even if the quality of medical care might have to be sacrificed to a degree. Thus, the lack of communication, the lack of reliable information, influenced the prime task activity of key organizational personnel.

Frequently, vital records are lost as a result of the disaster event. On many occasions, these records could have been of invaluable assistance to organizational incumbents performing emergency tasks. For example, the records which would have assisted workers in identifying the thousands of dead at the Vajont Dam disaster were buried under tons of debris. The problem of obtaining adequate and accurate information appears to be a common experience for organizations under stress and frequently serves to heighten existing stress conditions by reducing the organization's response capability.

To this point, the discussion has dealt with the question: when will changes occur in the performance structure of organizations under stress? Hypotheses dealing both with the demands placed on organizations and with the organization's capability of responding to these demands have been examined in terms of certain examples taken from Disaster Research Center field reports. Although no claim is made for the validity of these hypotheses in a rigid scientific sense, they are sufficiently compelling to warrant further investigation and evaluation.

A second question guiding much of the field research conducted by the Disaster Research Center staff is this: when an organization is in a stress state, what in the performance structure will change? The hypotheses formalized by Drabek which deal with this question have focused on four areas of organizational life: (1) tasks or activities, (2) decision-making patterns, (3) lines of authority, and (4) communication patterns.

Research data gathered by the Disaster Research Center field staff have generally supported these hypotheses.

First, almost without exception, organizations in disaster settings sharply increase their task output. In some organizations the increased demands for greater organizational output necessitate the activation of reserve equipment and/or the recall of off-duty personnel. Emergency mobilization is extremely important to these organizations, for failure to meet legitimate demands placed on them increases organizational stress and strain. Organizations, especially those whose official and/or legal charters prescribe certain tasks commonly associated with public emergencies -- police and fire departments, public works departments and public utilities -- are particularly susceptible to increased demands following community-wide disasters. As a result, their rate of task performance inevitably increases sharply.

To maintain the demand-capability equilibrium which exists to a relative degree in non-stress situations, and to meet certain high priority demands with utmost speed, organizations frequently develop priority systems to guide their task performance. During the Watts rioting, the Los Angeles Fire Department had more legitimate demands made on it than it could meet. Consequently, a priority response list was formally developed. The priorities established from highest to lowest were:

1. occupancies where a life hazard was believed to exist,
2. large and valuable properties,
3. structures in areas not previously having fires,
4. structures already extinguished several times,
5. structures isolated from other buildings,
6. automobile fires,
7. alarms received for fires in areas made untenable by the rioters.

This priority system clearly reflects the values of our society. The protection and preservation of human life is the paramount value and received the highest priority. At one end of the scale, organizational action was designed to save human life through fire suppression and rescue, and at the other end to save it by avoiding those situations which posed a threat to the safety of

organizational personnel. The second characteristic of the priorities established reflects the varying degrees of financial worth of the properties involved. However, the precedence of human values over property values is omnipresent -- and is vividly portrayed by the following incident which occurred during the rioting.

A crowd of persons was looting a large commercial establishment in the Watts area when fire bombs ignited the building. The fire was then fed by the looters who threw paper boxes and other flammables on it. As a result, the blaze spread so quickly that two looters were trapped on the second floor of the building. Many of the firemen who arrived at the scene busily engaged themselves with the rescue of the trapped men. Since this required the use of cutting torches, because the windows were heavily barred, much time was consumed. In the meantime, the building continued to burn.

It is doubtful whether the building could have been saved, even had all the firemen at the scene been assigned fire suppression duties. Nonetheless, there was never any debate on the part of fire officials as to which activity should receive top priority.

As indicated earlier, officials in some hospitals in Indianapolis, following the coliseum explosion, dismissed certain patients early and cancelled all but emergency surgery in anticipation of increased organizational demands of a high priority nature.

Following an earthquake, the maintenance section of a municipal public works department limited its activities entirely to street clearance. Only after all major streets were freed from debris did it begin the long and arduous task of repair and still later routine maintenance tasks.

These examples are representative of many in the data collected by the Disaster Research Center staff, indicating that organizations under stress tend to develop priority systems to guide the performance of their tasks and that these systems reflect not only the values of the organization but also those of the wider community.

Another set of hypotheses which reflect the basic assumptions of the Disaster Research Center deals with the decision-making patterns of organizations under stress, suggesting that, as the degree of organizational stress increases, (1) the rate of official and unofficial decision making increases, (2) organizational incumbents increasingly make only those decisions of highest priority, and (3) organizational incumbents confer less with one another before decisions are made.

A review of the data suggests that organizational stress is almost invariably accompanied by a rate increase in both official and unofficial decision making. This is accurate for both inter- and intraorganizational levels. When an organization is under stress the necessity for decision making increases; this seems to be a concomitant of the organization's attempt to maximize speed and efficiency in its response. Also, it may reflect the need for interdepartmental communication and decision making. The data also

suggest that organizational incumbents will limit themselves to those decisions of high priority.

The evidence concerning the amount of consultation among organizational incumbents is not so conclusive, however. During the forest fires in the Santa Barbara area of California in 1964, a large number of fire-fighting organizations was mobilized, including units from the city and county of Santa Barbara, several county fire districts, the United States Forestry Service and the California Civil Defense Agency. Because of the number of fire-fighting organizations, each with several units in the field, both inter- and intraorganizational coordination was extremely necessary. Thus, the volume of communications within and among participating organizations was intensified as personnel attempted to keep one another informed of developments in various sections of the fire area. In addition, personnel within departments sought to remain in touch with one another to keep posted on fire spread and organizational efforts. In this instance and others like it, the amount of consultation between organizational incumbents actually increased as the demands grew more widespread. Perhaps this phenomenon is a function of the wide geographic area involved and the large number of organizations participating.

From his simulated research, Drabek concluded that, as the degree of organizational stress increased, incumbents in the police communications section consulted with one another more frequently before making a decision on matters of policy and procedure. His findings about the number of persons consulted before a decision was made were generally inconclusive. This inconclusiveness may have resulted from the ecological arrangement of the communications room and/or the difficulty in determining at which point a decision was made.

Further investigation is required before conclusive generalizations about these hypotheses can be made.

From an analysis of the Santa Barbara fires and other widespread disasters such as the Alaska earthquake and the Watts fires, there is a high degree of certainty that as organizational demands increase the higher within organizational structures decisions are made. This is especially true during the early post-disaster period. Also significant is the fact that both inter- and intra-organizational consultations and joint decisions are made by incumbents of comparable rank. Decisions dealing with the highest priorities are made by the highest ranking officers available. For example, in the Santa Barbara situation, decisions dealing with such matters as the distribution of men and equipment and what areas would be saved were made by the ranking chiefs or their counterparts in each of the participating organizations. Moreover, chief officers tended to consult with other chief officers, captains with captains and dispatchers with dispatchers.

The third basic question asked by the Disaster Research Center staff in an effort to understand organizational behavior under stress conditions is: why does an organization under stress change the way it does? In seeking to answer this question, researchers have focused on two variables: pre-emergency planning and organizational strain. While it is true that these two variables do not exhaust the possible sources of explanation, they seem to be excellent

starting points from which to construct a more complete theoretical system.

The hypotheses dealing with official, pre-disaster emergency planning include these elements: the specificity of the emergency situation, i.e., does it clearly involve a legitimate demand on organizational resources, the specificity of organizational emergency plans, the amount of rehearsal of emergency procedures, the relationship between emergency rehearsals and the actual disaster and the degree of dissemination of emergency plans among organizational incumbents.

Data from field research is somewhat limited insofar as these hypotheses are concerned. From a review of the available reports, two major observations can be made.

First, there is great disparity among different organizations in pre-emergency planning, even among paramilitary organizations, such as police and fire departments.

For example, the only organizations in Anchorage, Alaska, which had any plans for dealing with peacetime emergencies were the various public utilities. As a result, the police and fire departments, along with other community organizations, had to improvise their procedures as the occasion arose.

While the Indianapolis Police Department had a disaster plan, it was quite limited in scope. In addition, considerable uncertainty existed about the currency of the plan at the time of the coliseum explosion, and also about the details of its specified emergency procedures -- if and how the police hierarchy were to be notified. In general, officials indicated that they regarded police activity in disasters as routine and did not seem to perceive a distinction between normal organizational activity and police functioning in a community catastrophe.

In contrast, the city of Chicago's Sanitation Bureau, which is charged with snow removal as well as refuse collection, and the Chicago Transit Authority, which also has "official" duties related to street clearance, have a very detailed plan which is to be followed in cases of emergency. One of the aspects of this plan is the city ordinance which forbids the parking of automobiles on any street upon which buses operate after snow has accumulated to a depth of one inch. This parking restriction continues for a period of eight hours after snow stops falling or until snow removal operations are completed.

Another aspect of the plan is to predict what types of weather the city will have in advance of its arrival. For this purpose, both the Bureau of Sanitation and the Chicago Transit Authority have hired a private consulting firm specializing in meteorological services. This firm provides such information as: (1) source of trouble, (2) time of beginning (specific), (3) duration, (4) type of snow, (5) snowfall accumulation, (6) rain/ice, time/type, (7) air temperatures, (8) wind (specific), (9) comments -- i.e., no rush-hour trouble, traffic icing at intersections, or icing due to cold pavement, (10) recommendations, (11) weather following the storm, and (12) snow shower details. How detailed such information is can be indicated by giving a

breakdown of one of the weather reporting categories.

SOURCE OF TROUBLE	PROBABILITY (Chances out of 10)
1. Snow.....	1 2 3 4 5 6 7 8 9 10
2. Snowstorm (Blizzard).....	1 2 3 4 5 6 7 8 9 10
3. Snowshowers (Details, Sec. L.).....	1 2 3 4 5 6 7 8 9 10
4. Drifting Snow (Details, Sec. H.).....	1 2 3 4 5 6 7 8 9 10
5. Glaze (Freezing Rain).....	1 2 3 4 5 6 7 8 9 10
6. Glaze (Freezing Drizzle).....	1 2 3 4 5 6 7 8 9 10
7. Sleet (Ice Pellets).....	1 2 3 4 5 6 7 8 9 10
8. Rain Changing to Snow.....	1 2 3 4 5 6 7 8 9 10
9. Rain Changing to Glaze.....	1 2 3 4 5 6 7 8 9 10
10. Glaze Changing to Snow.....	1 2 3 4 5 6 7 8 9 10
11. Glaze Changing to Rain.....	1 2 3 4 5 6 7 8 9 10
12. Snow Changing to Rain.....	1 2 3 4 5 6 7 8 9 10
13. Snow Changing to Glaze.....	1 2 3 4 5 6 7 8 9 10
14. Borderline: Snow/Rain.....	1 2 3 4 5 6 7 8 9 10
15. Borderline: Glaze/Rain.....	1 2 3 4 5 6 7 8 9 10
16. Borderline: Snow/Glaze.....	1 2 3 4 5 6 7 8 9 10
17. Borderline: Drizzle/Freezing Drizzle..	1 2 3 4 5 6 7 8 9 10
18. No Trouble.....	1 2 3 4 5 6 7 8 9 10

A second observation which comes from a review of Disaster Research Center field studies relates to the hypotheses dealing with the degree of congruency between pre-disaster plans and the disaster event. The Los Angeles Fire Department had a set of "Emergency Operating Procedures" which were to be activated in cases of extreme demand. Although this plan was never formally declared in force during the rioting, the department employed many of its provisions, e.g., the establishment of an operations control center and command posts, the recall of personnel and the utilization of reserve apparatus. In spite of this very extensive plan, the department experienced a great amount of organizational stress. As problems arose, it had to improvise field procedures; on several occasions it did not have central control over its field units; it had difficulty in assessing its demands; it had serious communications problems; and, it was not always able to carry out its primary task -- the prevention and suppression of fires.

These five conditions did not apply to the Cleveland Fire Department during the Hough rioting and fires of July 1966. Its emergency field procedures were planned rather than improvised; it never lost control of any of its field units; it had few problems in evaluating the fire-fighting demands being made on it; communications were not a major problem; and, the department was generally able to carry out its prescribed tasks of fire control.

Obvious differences exist between the two cities, their fire departments and the rioting which took place in them. However, these differences alone do not account for all the disparity between the two organizational responses. Significantly, the Cleveland Fire Department had anticipated that there might be rioting in some of the Negro areas of the city during the summer of 1966.

As a result, it prepared a specific document, "Fire Operations During a Civil Disturbance," which briefly set forth some operational changes in departmental procedures in case of widespread fires resulting from riots. In addition, "Plan East" was devised. In part, this plan specified which units were to be moved and where, and took into account most of the 67 pieces of equipment available to the organization. In the higher echelons of the Cleveland Fire Department, much thinking, discussion and planning dealt with the general kind of situation that actually developed. The pre-emergency plans were congruent to the emergency event.⁴

Both fire departments had emergency operating procedures which were utilized during periods of heavy organizational demand. The fundamental difference lies in the specificity of the plans related to the actual emergency. The Los Angeles plan was conceived primarily in terms of widespread fires, especially brush fires, wherein the general populace would be cooperative. The Cleveland plan was predicated on the very events which later developed: rioting, arson and hostile mobs. This fundamental difference is one of the factors which can best explain the varying degrees of organizational stress experienced by the two departments.

The two situations differed in another way. In Los Angeles, relatively little pre-emergency planning was done on an interorganizational level as far as rioting is concerned. As a result, consultations among various organizational personnel were extemporaneous and largely confined to dealing with individual incidents. In comparison, the Cleveland plans had been prepared in advance in consultation with police, National Guard and city officials. Within a short time after the initial incident in Cleveland, police cars, as planned, were escorting fire apparatus to alarm scenes. Later, two police officers rode with each fire truck in the area. Here again, the emergency plans made on an interorganizational level closely paralleled the ensuing emergency events. Thus, the congruity between the disaster plans and the disaster event, along with a well-conceived, workable plan coordinating interorganizational efforts is an extremely important element in the effectiveness of pre-emergency planning.

Researchers at the Disaster Research Center have sought to explain why an organization under stress changes the way it does by employing two basic concepts: pre-emergency planning and organizational strain. The examples cited illustrate some of the findings on pre-emergency planning. The following examples deal with organizational strain.

The hypotheses associated with organizational strain include: role conflict, role ambiguity, role dissensus, the location of strain in the organizational structure, the degree of dissensus on the priorities of organizational demands, and, the degree of dissensus on the legitimacy of demands on organizational incumbents and departments. Like the hypotheses dealing with other concepts employed by the Center, these are highly complex and interrelated.

The data on organizational strain represent some of the most valuable information gathered by Center personnel, since every organization analyzed under stress has manifested varying degrees of it. Although it is not possible to

accept or reject the hypotheses specifically posited, the concept has much utility in explaining why an organization under stress changes as it does.

One of the most vivid examples of organizational strain found in data at the Center comes from the analysis of a municipal public works department. In the emergency period, two of the sections of that department operated almost independently of each other. The isolation resulted from the mutual antagonism of the section chiefs -- an antagonism which had existed prior to the emergency. Attempts to coordinate the efforts of the two sections after the disaster were almost completely unsuccessful. Since neither section was critically involved in the organization's immediate response, the department's overall performance was not seriously affected. Without doubt, the interpersonal conflict between the two organizational incumbents of relatively high rank affected the performance of the sections they headed.

Another example of role conflict comes from the Disaster Research Center's analysis of the response of a hospital to the results of a tornado. Some nursing supervisors experienced varying levels of role conflict and ambiguity because they became involved directly in patient care at a time when their services might have been more profitably utilized in coordinating hospital activities. Considering their professional training and orientation towards aiding patients, this is not surprising. However, this kind of behavior was not always their choice. For example, one doctor asked the supervisor of nurses to go with him to check on some patients who were being temporarily lodged in the hospital lobby. Because of her subordinate status, the nurse did not feel that she could refuse, although she realized that her supervisory duties were more pressing and more important to the overall efficiency of the hospital. The patients in the lobby were the least severely injured; hence, the necessity for treatment was not urgent.

On another occasion during the emergency, one supervisory nurse did tell a physician that it would be better if she did not aid him as requested because she had other important responsibilities. The physician involved did not seem to be aware of the dilemma he had created for her. Overall confusion during the early stages of the emergency might have been lessened in this hospital had the supervisory nursing personnel more fully coordinated and organized certain basic activities.

Often, emergency organizations under stress are confronted with conflicting demands of high priority. Frequently, these conflicts are intraorganizational and present problems of role conflict, ambiguity and interdepartmental strain. Occasionally, the strain is interorganizational. In Crescent City, California, the fire department, while assisting the police in security and rescue activities, was suddenly faced, right after the fourth tidal wave hit, with a number of small fires over a 29-block area as well as a major fire at an oil and gas-line facility. Thus, fire department personnel were confronted with two sets of high priority demands.

Other fire departments in cities experiencing civil disturbances have been forced to decide whether or not they would become involved in riot control, such as the use of heavy streams of water against rioters and looters. In both

Cleveland and Los Angeles, the fire departments had decided before the rioting to confine themselves to rescue and fire suppression, leaving the maintenance of public order to the police and National Guard. By this decision these departments maintained their task boundaries as well as their public image as an organization charged with rescue and fire control. An important by-product of these decisions was the prevention of organizational strain growing from inter-organizational role ambiguity and conflict.

An effort has been made to summarize the findings of the Disaster Research Center relating to organizations under stress. The summary has been organized around three basic questions: (1) when will changes in the structure of an organization experiencing heavy demands occur; (2) what aspects of the organization's structure will be most affected; and, (3) why does the structure of an organization under stress change the way it does?

The first question was considered in terms of the concepts of organizational demand and organizational capability. The data, offered in the form of illustrative examples, tend to substantiate and reinforce the major hypotheses posited by Drabek and others.

The second question was approached in terms of the four concepts: (1) organizational task performance, (2) decision making, (3) authority, and (4) communications. Here again, the examples given illustrate the plausibility of the hypotheses dealing with these aspects of organizational behavior under stress conditions. The one major exception comes from the data dealing with the number of organizational incumbents consulted before emergency decisions are made.

The third question was viewed in terms of two theoretical concepts: pre-emergency planning and organizational strain. A great disparity in pre-emergency planning was found among organizations, even among those organizations sharing common tasks and structures. The illustrative materials offered generally support the hypotheses. While not complete, the data strongly support those hypotheses which relate the Time Two effectiveness of an organization to the congruency between pre-emergency planning and the actual disaster.

Numerous data were cited to reinforce the hypotheses associated with organizational strain. Doubtless, a close relationship exists between organizational stress and organizational strain.

Accepting the hypotheses at face value on the basis of the examples given is not justifiable. The examples are meant to be illustrations and not final tests of the hypotheses. At the same time, the overwhelming weight of the data available tends to support the usefulness of the hypotheses and the theoretical-conceptual framework from which they emerge.

FOOTNOTES: Chapter III

1. Thomas E. Drabek, Laboratory Simulation of a Police Communication System Under Stress (Columbus: The Ohio State University, College of Administrative Science, in press).
2. Thomas E. Drabek, Disaster in Aisle 13: A Case Study of the Coliseum Explosion at the Indiana State Fairgrounds, October 31, 1963 (Columbus: The Ohio State University, College of Administrative Science, 1967).
3. See Violence in the City, an End or a Beginning. A report of the Governor's Commission on the Los Angeles Riots; John A. McCone, Chairman, December, 1965 (hereafter referred to as the McCone Report).

CHAPTER IV

OPERATIONAL PROBLEMS OF ESTABLISHED ORGANIZATIONS

In the preceding chapters, observations were ordered by a particular theoretical framework. There are other observations which can be added on the functioning of established organizations. The theoretical framework just presented proved to be somewhat restrictive and required modification. The modification was necessitated by cumulative field observations in which it became apparent that the model was more appropriate to some types of organizations than it was with others. This required the development of a classification system which could encompass a greater range of field observations. This modified classification will be discussed here briefly. It should be pointed out initially, however, that the theoretical framework just presented did prove more appropriate for what we have called established organizations -- those organizations which exist prior to the disaster event and which continue in disaster context, those tasks which are familiar. While the theoretical framework has proven useful, further refinements and elaborations were needed. This was true -- not because the original guiding framework is inadequate -- but because it is incomplete. Particularly needed is a more extensive organizational typology which will include a broader, more complex concept of organization.

Increased awareness of this need grew from certain field studies which indicated that a great deal of organizational behavior could not be adequately explained by the conceptual framework used. The original definition of organization emphasized the "relatively permanent" aspects of interaction systems. Such a definition assumes a reasonable continuity of behavior in organizations between Time One and Time Two; it assumes that pre-disaster patterns can empirically predict post-disaster organizational activity. In large measure, field research has validated this assumption of continuity in organizational structures. There is no empirical evidence to indicate a severe disjunction between behavior before and after a disaster event, in the sense of the creation of panic, chaos and disorganization, as the popular press often imputes to post-disaster situations.

While this assumption of continuity was found to be valid and useful, major difficulties arose when a great deal of significant behavior observed following disasters had little or no connection with organizational activities within a community prior to the disaster event. That is, these emergent activities had little or tenuous connection to pre-existing community organizations. They were "relatively permanent" only in the sense that they tended to appear in the period following a disaster.

A good example of such an ad hoc emergent group is the one which developed following an explosion. There was considerable confusion within and between organizations mobilized to deal with that disaster. Lines of communication, the allocation and authorization of functions, the establishment of responsibility and numerous other interorganizational policies needed to be formulated. Sensing these and other needs, the chief of the police department, in consultation with several other officials, called a meeting for 2:00 a.m., about three

hours after the explosion. Present were representatives of the following organizations: the city police and fire departments, the state police, the county sheriff's office, the county coroner's office and the county civil defense unit. With the police chief serving as the "general coordinator," a number of important decisions were made delineating responsibilities and integrating the overall response of the organizations involved.

Since this emergent group did not "fit" the concept of organization then being utilized by the Disaster Research Center, little information on how it was established or functioned was obtained. It had no pre-existing structure; it had a minimum of permanency; its interpersonal structure was minimally established, if at all. Yet, this emergent interaction system performed not only useful but vital tasks during the disaster.

In addition to ad hoc groups such as the one described above, researchers at the Center have taken more specific note of organized response efforts that did not emanate from a previously existing organizational framework. A conceptual framework has been developed to treat all types of organized behavior, to account for organized efforts of organizations as well as those which appear to emerge without a recognized and established organization base prior to the disaster.

In every emergency, groups carry out tasks, but these tasks may be old, routine, assigned, everyday ones. Or, they may be new, emergent or unusual tasks for the groups or organizations involved. If a police department controls traffic, a fire department fights fires, or a hospital treats the injured, anyone recognizes these tasks as regular or traditional for such groups. On the other hand, non-regular or newly created tasks emerge in situations in which fire departments aid in traffic control, or perform the duties of the municipal electric company, or when nuns from a parochial school sort and distribute donated clothing from a relief center. The tasks are not new per se but new for the group in question. Thus, organizations and groups may be divided into those engaging in regular or non-regular tasks, traditional or disaster-generated tasks.

Distinguishing between groups with an old or established structure and those with a new or emergent one is also possible. In the former type, the members of the group stand in definite pre-disaster social relationships with one another, especially in their work activities. Such groups may be highly bureaucratic in form, such as a fire department, or they may be less formal in nature, such as a Veterans of Foreign Wars post. This, however, is not the important distinction. A more crucial distinction is the existence of the group and its structure as an entity prior to the disaster event. In such groups during a disaster, the members are in somewhat the same work relationships as they were prior to the emergency. Thus, the members of a city public health department or a citizen's band radio club which would be activated in a disaster normally have had work relationships with one another prior to the community stress situation. These social ties are maintained as the group engages in traditional or non-regular tasks during the emergency. In this way, pre-disaster social bonds extend into the work activity generated by a disaster.

On the other hand, a new or markedly altered structure may develop during the emergency. Some of these groups may mushroom from a small pre-disaster core; others may emerge as a totally new entity. The crucial similarity is that they have no actual pre-emergency existence, at least in the form they take during the emergency. An example would be a local Red Cross chapter whose cadre of full-time paid personnel provides the nucleus for large blocs of volunteers, who during an emergency undertake most of the group's work. Another example of an even more clearly defined emergent group is the one mentioned above which developed following an explosion. A new group may be partly planned or totally spontaneous, but, at any rate, it comes into being only during the emergency period.

Figure 1 schematizes the particular types of organized behavior that appear in the immediate post-disaster period.

FIGURE 1

TYPES OF ORGANIZED BEHAVIOR IN DISASTERS

S t r u c t u r e	Tasks	
	Regular	Non-Regular
Old	Type I Established	Type III Extending
New	Type II Expanding	Type IV Emergent

Since this report is primarily focused on Type I organizations, only a brief description of each will be offered here.

As noted, a Type I organization is an established group carrying out regular tasks, for example, the official members of a city police force directing traffic around the impact zone after a tornado has struck a community.

A Type II organization is an expanding group with regular tasks; quite often these are the result of community or organizational planning. The group exists on "paper," but it is not an ongoing organization prior to the disaster event. A Red Cross chapter which has expanded to include volunteers running a shelter after a hurricane illustrates a Type II group.

A Type III organization is an extending group which undertakes non-regular tasks, for example, a construction company utilizing its men and equipment to dig through debris and to assist during rescue operations.

A Type IV organization is an emergent group which becomes engaged in non-regular tasks. An example is an ad hoc group made up of representatives of various community organizations who seek to coordinate the community's response.

Differential Adaptation Within Established Organizations

While this expanded classification was necessary to encompass the range of organized behavior evident in community activity subsequent to a disaster event, the primary focus here is on Type I organizations, what we have called established organizations. We can also use this expanded classification, however, to understand the ways established organizations adapt to the demands created by a disaster event. Various segments of the same organization may be differentially affected by operations in a disaster situation. While we have suggested that one of the major differentiating features of an established organization is that it continues its pre-existing tasks and it brings its pre-disaster structure into disaster operations, this structure still may undergo some modification. Since organizations are characterized by complexity, this means that they have sub-parts. These sub-parts, then, may be differentially affected by disaster operations. In effect, the direction of adaptation of the sub-parts tends to follow the pattern of the emergence of the four types of groups. Some sub-parts of the organization may operate in the disaster context with old tasks and with a structure which is relatively unchanged (Type I). Other sections of the organization may be expanded by the addition of new personnel to cope with the overload of demands made on the organization (Type II). Part of the "addition" of new personnel may come from within the organization in the sense that the pre-disaster tasks of particular sub-parts now may no longer be meaningful and the personnel from these sub-parts can be utilized in performing "new" tasks (Type III). Because of the changes within the internal structure of the organization, and accentuated by the rearrangements of shifts and the possible loss of key personnel, decision making may be relegated to a new "emergent" group within the organization (Type IV).

Illustrating this process, one might look at the operation of a municipal police department under disaster conditions. The communications section may be more likely to continue its pre-disaster tasks with the same personnel. These personnel possess somewhat specialized skills not easy to reproduce. There are also physical limitations of space and equipment which makes expansion difficult. This part of the organization, then, continues operation during the emergency period following the patterns they have developed, working together prior to the disaster event. The patrol division, however, is expanded by the addition of a number of reserve police who assist the regular members in search and rescue, traffic control and security. Each patrolman may now have ten men "under" him and the officer in charge of the shift is now operating with a segment of the organization which is ten times larger than it was in its pre-disaster operation. The detective bureau may "suspend" its operation during disaster activity and its personnel, perhaps as a unit, are reassigned to new tasks. While this bureau has a pre-disaster existence, now it becomes engaged in "new" tasks. Because of such shifts within the organization, the pre-disaster patterns of decision making no longer are meaningful and a new group of decision makers, perhaps some of whom hold positions without

such authority in their pre-disaster activities, now become involved in this process. In effect, then, the suggestion is made here that sub-parts of an organization may be affected in ways similar to the elaboration and changes which occur when one views the total organized behavior within a community. Certain segments (or sub-parts of an existing organization) may continue traditional tasks but other segments or sub-parts may expand, become involved with new tasks and even "emerge" to cope with particular problems within the scope of their disaster activity. To the extent that the sub-parts are modified, they will evidence effects similar to those experienced by "whole" organizations in the same situation of expansion, etc.

Given this differential adaptation, a number of additional comments will be made on the operation of these established organizations in a disaster context. First, certain observations will be made on the mobilization of personnel in established organizations. Second, a discussion of some of the operational problems will be presented. Third, the interorganizational problems of such organizations will be indicated.

Mobilization of Personnel

The demands which are presented by a community-wide disaster often evoke the rapid mobilization of personnel in those organizations which become involved. Established organizations, as a result of community expectations of involvement, usually attempt to mobilize quickly. Most such organizations have well-developed plans for mobilization of personnel. In addition, the paramilitary groups, such as the police and fire departments, are round-the-clock operations which shift personnel. This means that, at any given time, "extra" personnel are available to the organizations. Even taking into account differences among shifts, i.e., the night shift might be smaller than the day shifts, such organizations usually have available at least double the personnel necessary to operate at normal levels. Such organizations usually have predetermined plans for notification of such off-shift personnel to report for duty. In some instances, certain categories are expected to report to the organizational headquarters without notification. In other instances, they are expected to call in (assuming that communication lines are available) and determine if their services are necessary. In other instances, a standardized procedure of notification of off-duty personnel is used. Generally, with such personnel resources, such organizations can mobilize quickly. Since most of the positions within such groups can be filled equally well with several different persons, even the "loss" of a considerable number of such personnel in the impact area would not immobilize their ability to function.

The aspect of mobilization which has received the greatest amount of attention in disaster literature has centered on the problem of role conflict. Killian initiated the discussion of this topic in an article entitled, "The Significance of Multiple-Group Membership in Disaster."¹ Killian emphasized a common sociological phenomenon that people have memberships in many different types of groups and that, in each, there are certain expectations as to how they are to behave. He then described a variety of membership groups among which conflicts of loyalty may arise in disaster settings and suggested

the consequences of such conflicting demands for the community's ability to restore itself to a semblance of normality. He proposed that the conflict most frequently faced by persons in the communities he studied was between the family on the one hand, and a variety of other units, most notably occupational and community loyalties, on the other hand. In the vast majority of the cases of such conflict Killian found that persons resolved these conflicts in favor of loyalty to their family groups and laid aside more "important" community obligations.

Without attempting here to unravel all of the theoretical and observational complexities of this widespread assumption of the negative consequences of role conflict for the personnel of established organizations, it can be asserted that, based on the observation of the Disaster Research Center in a variety of disaster situations, the abandonment of organizational roles simply does not occur. While individuals in or near a disaster impact area are obviously confronted with choices of alternative actions, it seems clear that they do not abandon their roles in organizations which they feel are relevant in disaster activities. This can be understood if we look carefully at the process of mobilization. Established organizations are, in all probability, partly mobilized when the disaster event occurs, since they often work on a 24-hour, 7-day-a-week schedule. In addition, if the disaster event has been preceded by any period of warning, additional personnel are also probably on duty. Let us assume, however, a disaster without warning: The established organizations are notified of the event. With the personnel on duty and with the likelihood that they possess equipment to facilitate physical movement and communication, their personnel can move into the impact area quickly and can communicate to the organizational headquarters relevant information about the nature of the event. Those on duty have definite responsibilities and, as a by-product of their training and previous participation in the organization, are aware that their disaster activity is expected. Their ties to the organization are often visible, e.g., the uniforms of the police and fire departments, the characteristic vehicles of the utilities. Personnel have also developed a degree of personal loyalty to other members of the organization.

It is true, of course, that organizational members on duty at the time of the event will be concerned about their families. Even though they are on duty, such personnel have certain advantages in the situation. The organization becomes the recipient of information from the impact area which allows on-duty members to ascertain, in part, the scope of the impact and its implications for the safety of their families. Personnel also have available more specific types of information, e.g., those who report as a part of the mobilization plan bring additional and sometimes specific information about the safety of the families of others. Because of acquaintance among organizational members, those reporting can often make a cursory survey of member families prior to reporting for duty. In addition, since personnel of the disaster-activated established organizations often have mobility even under the most difficult conditions produced by the disaster, requests can be made to personnel who might be working in another area to ascertain the safety of a particular family. The net effect is that on-duty personnel are unlikely to abandon their roles.

Those organization members not on duty sometimes have the advantage of being able to determine the safety of family members prior to reporting for duty. Based on the behavior typical in rescue activity, off-duty members may initially be concerned with the safety of certain other people. After the safety of these specific persons is determined, some organization members may become sidetracked in general rescue work and not report for duty. This action would more likely occur, however, in conditions where the involvement of the organization and the necessity of the individual's participation is problematic. In other words, a person employed in a factory and on his way to his shift may become involved in general rescue work since he feels that his organization will have little to do with the immediate activity and, thus, his obligations are to the more immediate problems of rescue. On the other hand, an off-duty policeman is hardly likely to assume that the police department is not relevant in the situation and that he will not be needed. Even if an off-duty policeman becomes initially involved in general rescue work, he probably does this on the assumption that this is a part of his organizational activities. He might continue this while seeking to notify his organization of his location and activity. If he had specific organizational responsibility such as a communications clerk, however, he would less likely be diverted into general rescue work since his specialized skills had to be utilized elsewhere. Taking all of these factors into account leads to the suggestion that established organizations usually have sufficient personnel. The reasons are:

1. Established organizations are likely to be mobilized, at least in part, at disaster impact.
2. Because they tend to operate around the clock, established organizations have resources of additional trained personnel.
3. Because established organizations tend to be formalized in their structure, several persons often can fill the same position in the organization.
4. Such organizations are likely to have mobilization plans which operate somewhat automatically. That is, given certain conditions, personnel are expected to report for their jobs. Also, formalized plans for notification to report for duty are usually extant.
5. Off-duty personnel are aware of the probability of the involvement of their organization in disaster activities.
6. Established organizations have means to determine the safety of member families.

In summation, the loss of personnel anticipated by some as a result of role conflict does not seem to be particularly important. Established organizations often have trained personnel immediately available and other trained people as reserves who can be and usually are mobilized quickly.

In fact, there seems to be a tendency for such organizations to "over" mobilize. Upon disaster impact, these organizations are generally the

recipients of the first community demands to initiate action. Since the scope of the impact is not, at this time, clear, the assumption is generally made that all of the resources of personnel and equipment will be needed. Maximum mobilization tends to result in "excess" personnel. As the scope of the tasks becomes known and while they may be sufficient to involve all mobilized personnel, there is the gradual recognition that, if the organization is to function over any extended period of time, personnel should not be expended too quickly. It is common to make some sort of concession in the situation. For example, police and fire departments may lengthen the shift. In this way, three shifts may be merged into two and these two can then be supplemented by half of the third shift. Other adjustments, of course, are to request other groups to assume some of the organization's traditional tasks or to accept "volunteers" working under the supervision of regular personnel to cope with these usual tasks.

Operational Problems in a New Context

Every organization develops certain patterned ways of carrying out its tasks. To carry out such tasks, ways of communicating within the organization are developed as well as describable patterns of authority and decision making. It is also useful to think of an organization as complex, consisting of several units. As we have already suggested, some of these units may be more affected than others by their disaster involvement.

In general, a disaster event will have the following consequences for groups with an established structure. Certain aspects of its previous activities will become less important in its disaster functioning. For example, the routines previously developed to accomplish pre-disaster tasks will be disrupted. Traditional lines of communication and authority often will be abrogated. Decision making will involve different processes and people than previously. On the other hand, there will be a significant increase in activities which relate to communication and coordination. There will be greater concern for defining the boundaries of the organization. Certain segments of the organization will become more crucial to the functioning of the organization than they are in pre-disaster functioning. It is useful to treat these consequences in terms of the dimensions of the "new situation" which the disaster creates.

1. Immediately after impact, established organizations have to operate under conditions of great uncertainty. They cannot automatically react to increased demands since they have no knowledge of them. Initially a disaster event provides only tentative suggestions as to the scope of its impact and thus an organization has little knowledge as to the magnitude of the demands which will be made on it. In addition to the uncertainty of the nature of the demands, such organizations may also experience uncertainty as to the status of their own personnel and material resources as well as the condition of other organizations on which they depend.

Uncertainty has two consequences for operation. First, it provides the conditions whereby an organization becomes involved, and second, it provides the impetus for certain shifts in the pre-disaster patterns of the organization.

In addition to the diffuse "obligations" of the organization to become involved in disaster-related activity, uncertainty produces psychological strain on organizational members. Previous patterns of behavior which provided security for members, through custom, are now inhibited. In the absence of familiar paths of action, one common response is to "do" something. With such motivations, organizational members sometimes involve themselves in activities which have little relation to their pre-disaster activities or to the role which the organization has defined for itself in disaster. Individual commitment to scattered activities as a defense for uncertainty often then leads to organizational commitment. If an individual becomes involved, he then may request help from other organizational members and draw on other resources of the organization. Such requests then provide other organizational members with "something" to "do" since they feel the same urgency to act. In addition, the involvement of individuals in specific disaster tasks often results in organizational involvement. If an individual is a "member" of the organization, there are certain obligations toward him and if the resources of the organization are not committed, they may be diverted into "his" activities. Once committed to a particular activity in such a way, an organization may find it difficult to divest itself of the "responsibility" and to concentrate its resources in other directions. Initial involvement will often pre-empt tasks so other organizations have to move toward other "unmet" community needs.

Uncertainty leads to involvement of organizations in another way. Established organizations have readily available personnel who possess organizational "loyalty" and can be mobilized quickly and effectively. These resources are ready and waiting, but the only knowledge of the tasks of the organization is based on the initial exaggerated reports. If the organization waits for a clarification of the situation so its role and tasks can be clearly defined, the organization may run the risk of being defined as "not" willing to help. This leads to a rather quick commitment of personnel and resources to tasks which are often "outside" the scope of its pre-disaster experience or its projected disaster role.

2. Established organizations have to operate under conditions of urgency. As a result of the uncertainty and the probable increase in the tasks for the organization to accomplish, tasks which could be scheduled, routinized and delayed have to be re-evaluated. Routines which have developed in the pre-disaster operations may now be unnecessary luxuries. Organizational members feel some urgency to accomplish those tasks which are as yet still undefined. This urgency is often translated into a greater autonomy of action on the part of individuals throughout the organization. Procedures which are normally followed can be violated with impunity. Individuals often take the initiative for actions which, according to pre-disaster patterns, would require and result in extensive consultation with others. Decision making is short-circuited, not involving those who "should" be consulted but those who happen to be available. Decisions made in this way are often later given sanction in an ex post facto fashion. In other words, members of an organization experience an increase in autonomy. They initiate actions which normally would require extensive consultation. These actions are usually supported by those in authority as appropriate for the occasion.

3. Established organizations have to operate in the context of the emergency consensus. In the immediate post-impact situation, there develops what has been called the emergency consensus.² The emergency consensus is an ordering of implicit agreements which emerges among community members as to what tasks are important. "Normal" community life is usually characterized by multiple and somewhat contradictory values, but a disaster event tends to order values in an explicit way. By and large, care for victims takes first priority, and any tasks which are not somehow related to this dominant task tend to have low priority.

Since many established organizations have multiple tasks prior to disaster, some of these tasks become extremely relevant after disaster impact while others become irrelevant. For example, formal admittance procedures in a hospital may be ignored except as they might relate to crucial medical information. Or, handling traffic offenses might have been an important part of pre-disaster police activity, but traffic offenses tend to be ignored during the emergency period, except as they might affect the rapid restoration of community services to facilitate the care of survivors. This priority system may increase the efficiency and effectiveness of a particular organization in disaster activity since efforts are then concentrated on the accomplishment of immediately relevant tasks. On the other hand, those personnel in established organizations whose normal pre-disaster duties do not relate to high priority values may be switched during the emergency period to other activities which have limited continuity to their pre-disaster skills and activity. In one sense, they become "volunteers" within their own organization.

In addition, this shift in values and priorities within the community which has consequences for the functions of organizations may also modify and abrogate other traditional organizational practices. For example, the norms which specify the appropriate dress patterns for work may become neither enforced nor considered relevant. Status distinctions which are normative may be relaxed and replaced with equalitarian relationships. Scarce goods and symbols which usually are the object of competition are shared. Offices which were sacrosanct become communal property and organizational resources which are usually carefully conserved become widely available for use.

4. Established organizations lose autonomy in disaster conditions. In pre-disaster conditions, organizations have differing degrees of autonomy. Autonomy means the ability to control the organizational environment so that significant activities can be internally determined. In a disaster, organizations have to operate in a larger community context in which established relationships have to be reworked since they cannot be assumed. There is pressure for each particular organization to show that it is properly concerned with the total needs of the community. By placing itself at the service of the community, an organization then opens itself to receive direction from, or at least having to react to influences, outside the organization. Such influences may vary from specific requests from the city government to reacting to the activities of other organizations. This results in a loss of organizational autonomy.

In addition, many organizations which have to coordinate their activity with state, regional or national hierarchy may find themselves called upon to inform such levels more frequently of their activity, thereby reducing their autonomy. More likely, such higher levels of the organization may send personnel to help the local group. The presence of such personnel on the local scene means that activity comes under this scrutiny and perhaps adds another level of consultations in decision making. For example, the local telephone company may request additional help or it may be sent without such a request. Such help often involves individuals whose normal position in the larger company is superior to any of the local personnel. The presence of such personnel often evokes changes in the traditional ways of doing things.

Within the organization, the loss of autonomy means greater effort and energy must be spent on activities dealing with coordination. In addition, because of the greater permeability of the organization, it becomes more difficult to define clearly the boundaries of the organization -- in particular, "Who are the members who can act in the name of the organization?" Since individual members have increased personal autonomy, these members may then commit the organization to activities without the advice and consent of the traditional decision makers.

Interorganizational Relationships

Organizations do not function in isolation during the emergency period after a disaster event. Other organizations become part of the emergency environment as well as the tasks which are created by the event. The way in which a particular organization can function is in part dependent upon the larger context of the activities of the other involved organizations. We have already suggested that a disaster event reduces the autonomy of each organization since it no longer has the same control over its environment that it had previously. Much of this lack of control over the environment is created by the diverse activities of other community organizations. No organization has complete control since its actions are conditioned by the activities of others.

Two major types of interorganizational relationships can be observed in disaster activity. One form is seen in terms of the exchange of goods and service among organizations. Another form is the exchange of communication during the emergency period. Established organizations become the focal point of the interorganizational relationships, necessary for community-wide coordination.

Since established organizations have disaster responsibilities "assigned" by the community and since they are more likely to be mobilized early, such organizations become quickly involved after impact. This means that established organizations need to solicit information from others. Since information as to what actually "happened" is difficult to obtain and essential for effective operation, the centrality of established organizations is enhanced as they become the major repository of knowledge about community activities. Too, as the scope of impact becomes clearer with the cumulation of information, the necessity for added resources may also be apparent. Established organizations

then become involved in seeking out and acquiring needed resources.

The central position of established organizations in the pattern of interorganizational relationships is encouraged by the greater availability of what might be called boundary personnel. Many established organizations have personnel with positions which, during their pre-disaster operations, necessitate continued contact with others outside the organization. For example, an employee whose responsibility within an organization is to obtain various kinds of supplies will develop knowledge of potential sources of supply as well as techniques and procedures of acquisition. In some instances, a person may become a member of two or more organizations. This is more likely among members of established organizations and can be illustrated by the police chief who is also a member of a Red Cross Disaster Committee. (Conversely, membership on the disaster committee is not likely to lead to an appointment in the police department.) These multiple memberships often provide a basis of knowledge of the operations of both organizations and facilitate the development of interorganizational communication. Too, through continued participation, friendships among members of community organizations develop. These friendship patterns, during the emergency period, become a major basis for interorganizational communication.

Established organizations also have the added "advantage" of greater organizational legitimacy within the community. During the emergency period, some community organizations, particularly business and educational ones, suspend operations since they find it difficult to claim that their activities contribute to ongoing disaster activity. Organizations which have a claim on the competence and skills necessary in a disaster context will necessarily continue their activities and these are more likely to be established organizations. Interorganizational relationships tend to occur most frequently between organizations that consider each other as being legitimate. Pre-disaster contact among such organizations give initial legitimacy which is reinforced by further contact in the disaster context. By contrast, even though a degree of legitimacy might be attributed to the cadre of Type II expanding organizations, the rapid expansion of these and the emergence of "new" leadership reduces the legitimization which ordinarily stems from stable leadership. Too, the lack of previous contact with particular organizations in pre-disaster activity would tend to cast doubt upon its legitimacy operating in a disaster context.

The major point here is that the interorganizational relationships necessary for the development of community coordination have their central focus around established organizations. These organizations have pre-disaster experience working together and, as a by-product of this, members develop knowledge and acquaintance across organizational boundaries. Such organizations have greater legitimacy within the community which provides traditional authority which in turn other organizations, as they become involved, have to accept.

Since many of the established organizations are local governmental units, such as police, fire, public works departments, or are quasi-public organizations, such as utilities or hospitals, perhaps a final note should be added on the legal and jurisdictional context in which interorganizational relations take place. Many established organizations have their responsibilities and

their jurisdictions defined by law. The actual disaster "responsibilities" seldom correspond completely with the pre-disaster definitions nor is the impact area identical with jurisdictional boundaries. Given these complications, legal limitations tend to be ignored during the emergency period and, in effect, do not present an obstacle to the accomplishment of organizational tasks nor to the development of interorganizational cooperation. The emergency period is more likely to be characterized by pragmatic decision making based on what has to be accomplished even if legal limits have to be placed aside. This process is illustrated well in the pattern of intergovernmental relations during the emergency period after the Topeka tornado.³

From approximately 7:20 p.m., June 8, to 7:00 a.m., June 9, 1966 the initiative for decision making and action rested with hundreds of individuals, who, through the first night after the tornado struck made individual decisions which slowly mobilized the vast human and material resources necessary to deal with the aftermath of a major disaster. During these same night hours, the mayor, the city commissioners, the county commissioners, the governor, adjutant general, and city and county department heads met to begin the process of re-establishing communication networks and to forge bureaucratic machinery. By the next morning, the political officials had worked out a scheme for apportioning responsibilities and assigning authority so that recovery operations might begin in earnest when daylight arrived June 9, 1966.

The remarkable thing about this process of assignments and specifying responsibilities and defining authority was the relatively casual and pragmatic way in which they were worked out. The planning for a disaster which had occurred over a period of fourteen years had been characterized by long, delicate, very difficult face-to-face and "behind the doors" negotiations. There had been repeated clarifications, revisions, re-negotiations, drafting and re-drafting of operating procedures in a disaster situation. This kind of pre-disaster difficulty was contrasted with the relative effectiveness of the political leaders during the recovery operations. . . . The mayor continued as nominal head of the recovery operations committee made up of various elected political officials, heads of city and county departments, and representatives of quasi-public groups. These leaders would meet together late each evening to go over the problems of the day and decide what would be done the following day.

Of greatest significance for the discussions here was the obviously easy intergovernmental cooperation during the recovery operations. In addition to the cooperation between the city of Topeka and Shawnee County during this period a great number of municipal and county

governments from Kansas and Missouri willingly provided men and equipment in vast quantities for the recovery operations. While it seems startling, and possibly hard to believe, the best inventory that can be made indicates that more than sixty discrete units of government representing local, county, special districts, and state government ranging from a volunteer fire department to the Executive Office of the President were directly involved in the recovery operations.

The emergency recovery period covering the period of June 8-18, 1966 approximately, was characterized by a pragmatic approach to problem solving. Decisions were made on the basis of what needed to be done. Responsibility for carrying out decisions was given to those who had the skill and ability to get the task done. This period was not heavy with questions of legal and fiscal authority nor were problems of the law relating to private and public property evident. No attempt was made to delineate clearly the authority and responsibilities of various governmental units.

During the disaster recovery period political officials exercised authority and held a degree of autonomy that removed their decisions from review or control by the voter. Governmental officials during the disaster exercise a degree of authority which most would consider to be undemocratic since the decisions of elected officials during a disaster are generally not subject to review by the voter and rarely are they subject to any sustained scrutiny by the courts.

Within 10 days after the tornado had struck, governmental officials and department heads increasingly spent more time in their offices and progressively less time in the Emergency Operating Center. Lower level department heads and bureaucrats assumed responsibility for the tasks the elected officials had held from the early hours of the disaster. By now, the bureaucratic machinery of government had been re-established. Elected officials and department heads reverted to their more traditional ways of dealing with governmental affairs. Questions of legal authority became prevalent at this point. Citizen and elected official became increasingly concerned with questions of property rights, and the power of government in relation to the property rights of an individual. Elected officials were particularly sensitive to the charge of government interference in private property matters. The press particularly gave a great deal of attention to discussions by elected officials of the authority of government to act when conditions on private property endangered

the health of the private citizen.

Government operations after the close of the disaster recovery period were devoted almost exclusively to establishing the legal authority for taking certain actions after the close of the recovery period. Most discussions centered around the legal authority of various units of government to take certain kinds of constructive action, particularly any that involved expenses for reconstruction of facilities destroyed by the disaster. Increasingly attention was riveted on the attorneys and the statute books. It is surprising to note that during the 10-day period immediately following the tornado, a tremendously large number of decisions were made but relatively few of these were ever questioned in the press nor were they subjected to review by the courts. Decisions made subsequent to the close of the recovery period, however, have been significantly more subject to legal issues, particularly those which commit financial resources. Even at this point, a number of invoices are still pending approval for payment by either the city commission and/or the county commissioner about which there are legal questions about the authority of either the city or the county to pay.

Based on the Topeka Tornado, it is clear intergovernmental relations will generally be quite harmonious immediately following the disaster. Few questions of authority are raised, for everyone is committed to restoring order to the environment so people can get on with life. As the emergency nature of the disaster disappears and life returns to a more normal pace, relationships among units of government revert to their old characteristics of: legal difficulties, chronic disagreement on the tasks that are ahead and how to meet them, jealous guarding of prerogatives. The change is so striking as to suggest that intergovernmental cooperation will be close, easy and productive when there is a high degree of agreement among governmental officials and the voters about the tasks that must be undertaken. When there is less agreement, a much greater strain will be placed on intergovernmental cooperation and there will be increasing evidence of intergovernmental non-cooperation.

FOOTNOTES: Chapter IV

1. Lewis Killian, "The Significance of Multiple-Group Membership in Disaster," The American Journal of Sociology, LVII, No. 4 (1952), pp. 309-315.
2. Russell R. Dynes, Organized Behavior in Disaster: Analysis and Conceptualization (Columbus: The Ohio State University, College of Administrative Science, 1968).
3. Adapted from Roger D. Hoffmaster, "Intergovernmental Implications of the Topeka Tornado," Midwest Review of Public Administration, forthcoming.

CHAPTER V

IMPLICATIONS FOR NUCLEAR CATASTROPHE

In these concluding pages implications concerning the operations of established organizations in natural disasters will be projected to a more inclusive context which might occur in a nuclear catastrophe. The basic assumption made here is that the range of problems experienced by established organizations in natural disaster would be similar to those which would be encountered operating in a nuclear catastrophe. While the scope of impact may be greater in a nuclear catastrophe, and there may be unique problems such as radiation, remedial action which could be taken would come from those organizations which still possess capabilities. These are most likely to be established organizations. Based on these assumptions, the following comments can be made about both the potential effectiveness and the potential problems of such organizations in a nuclear context.

Based on observations made in a disaster context, established organizations generally function with a high degree of effectiveness. While specific established organizations may, in a situation with widespread impact, experience some stress, in most situations organizational stress is usually minimal. Effectiveness has to be measured by the ability of these organizations to accomplish tasks in the context of extremely high demands. The disorganized behavior which many assume follows a disaster event does not apply to the "behavior" of established organizations. The major reason for their effective functioning is that such organizations are more likely to maintain their capabilities in a disaster and are often able to limit the demands which are made upon them.

Established organizations are able to maintain a high level of capability, in spite of the potentially threatening consequences of a disaster event, for the following reasons:

1. Such organizations continue tasks in the emergency period which are similar to their pre-emergency operation.
2. Such organizations expect to become involved in emergency activity. This expected involvement is considered to be a part of organizational responsibility and is known to members of the organization.
3. Such organizations normally have "excess" trained personnel since they usually have several shifts for continuous operation. This means that their operation is less hampered by the loss of specific persons.
4. With the exception of those organizations with highly technical and professional personnel, such as hospitals, such organizations have a greater interchangeability of personnel than do most other organizational types.

5. Anticipated organizational involvement among experienced personnel produces rapid and self-generating mobilization in an emergency.
6. Such organizations usually possess extensive resources and members know ways of obtaining additional resources.
7. Such organizations are more likely to have standard emergency plans or, at least, well-understood operational procedures for emergency situations.
8. Because they operate as a unit in the pre-emergency period, such organizations develop experience as a work group and this provides greater certainty and security in their post-impact operations.
9. Such organizations have had previous experience adapting to and coordinating with other established organizations within the community. Such experience is an initial advantage in the development of post-impact coordination.

These are some of the reasons such organizations are able to maintain and, in many instances, even increase their capabilities in emergency conditions. In addition to maintaining and even increasing their capabilities in emergency situations, established organizations also minimize stress by controlling the demands which are made on them. By limiting demands, fewer capabilities are needed. There is a tendency for tasks which are somewhat new to be ignored or slighted by established organizations. This is particularly true of tasks which appear early in the emergency period and which are not the definite responsibility of any particular organizations, e.g., search and rescue. Established organizations become most centrally involved in those tasks which bear close similarity to their everyday pre-emergency tasks. If they do become involved in new tasks by default, there is a tendency to abandon them quickly when it seems other individuals or organizations will assume them. While the control of "excess" demands minimizes stress on a specific organization, it has negative consequences for the larger community since it means those tasks ultimately have to be accepted by other organizations with perhaps lesser capabilities.

Persistent Problems

While the overall evaluation of the effectiveness of established organizations is positive, there are certain persistent problems in a disaster context which would not be changed in a nuclear one.

1. Such organizations are often reluctant to accept new tasks which emerge during the emergency period. We have already alluded to this as perhaps a conscious decision on the part of personnel to limit the demands made on the organization. This reluctance may also be due to the fact that organizational officials see only certain problems -- those with which they are already familiar -- and are "blinded" to others.

2. Such organizations do not seem to be able to integrate additional manpower effectively, particularly volunteers, into their performance structure. The cohesiveness which such organizations develop as a result of earlier work experience support members in carrying out traditional tasks. This cohesion, in turn, prevents the integration of additional non-organizational members. It could be argued that it is difficult in organizations which depend on more professionalized personnel to accept volunteers since they lack specialized training. One can also argue, for example, that the "skills" utilized by a police department in most disaster operations are not the end product of intensive professional training. One consequence of professional training is, however, increased identification with the organization and the profession which, in turn, marks off others as "outsiders." This identification and esprit de corps may increase the effectiveness of the work unit, but it also seems to preclude the addition of non-organizational personnel to assume overload demands.
3. Such organizations often find it difficult to coordinate their activity with non-established community organizations. Because of their day-to-day pre-emergency operations, established organizations usually develop patterns of coordination with other similar organizations. Networks of communication often exist between police departments, fire departments, hospitals, etc. Knowledge of the activities of these other organizations and acquaintance with their organizational personnel provide an initial base for establishing coordinated activity during the emergency period. The involvement of other community organizations in widespread community emergencies, however, creates a whole new set of relationships necessary for the establishment of coordination. With a number of new organizations involved in tasks which cannot be handled by the resources of established organizations and since these organizations are not part of the traditional pre-emergency pattern, established organizations lack previous experience and continued contact with these others. In addition, because of the lack of previous cooperation, there is often the attitude on the part of personnel in established organizations that those other organizations are not as significant or as crucial for coordination within the community.
4. Such organizations often become involved in anticipating unrealistic problems and divert resources which could be more effectively used elsewhere. In part, this tendency is most evident where there is lack of previous organizational experience with widespread emergency situations. It is also due to the fact that images of what "actually" happened may be based on false assumptions about human behavior and human needs in crisis situations. For example, organizational officials may be concerned about "panic behavior," which is rare, but completely overlook the problems created by the convergence of information in the area of impact. Hospital officials may spend time and energy in obtaining added medical

resources assuming a high casualty rate. Police departments may take elaborate precautions against looting, which is rare, while ignoring the control problems which are more likely to result from the traffic convergence on the impact area.

5. Such organizations often lack an "overall" view of the necessary community tasks. Most organizations develop ways of "monitoring" that part of the environment which affects it most directly. Organizations are usually interested only in a narrow range of events which immediately affect their operations. In an emergency event which has widespread implications, the implications for a particular organization have to be seen in the context of a "completely" transformed environment. Knowledge of this transformation has to be obtained before the role of the activities of the organization can be clearly determined. Perhaps another way to make the same point is that a community usually has no central point for the collection of information concerning what has happened, so each organization usually collects its "own." In a widespread emergency, "overall" knowledge is necessary in order to determine the most effective role of specific organizations.

Most of the persistent problems mentioned above are not inherent characteristics of established organizations. Most of them relate to problems which emerge from widespread impact and the resulting difficulties of coordinating involvement of many different types of organizations. Since established organizations are usually at the core and are often the focus of coordinative effort within the community, such problems become particularly pertinent for them. Such problems would be accentuated in the wide impact which could be anticipated in a nuclear catastrophe.

In spite of these difficulties, the overall conclusion based on the observation of established organizations in the disaster context is that they function effectively. Since such organizations are at the center of the pattern of community activity which emerges to cope with problems of the emergency period, this provides a solid core for the accomplishment of the many tasks which could be created. Such organizations accomplish those tasks within the scope of their responsibility with reasonable dispatch since they have established procedures, sufficient personnel and accessible resources. The effectiveness of such organizations underscores the payoff which results from organizational planning as well as the importance of training personnel for emergency situations.